History of Fire in Texas

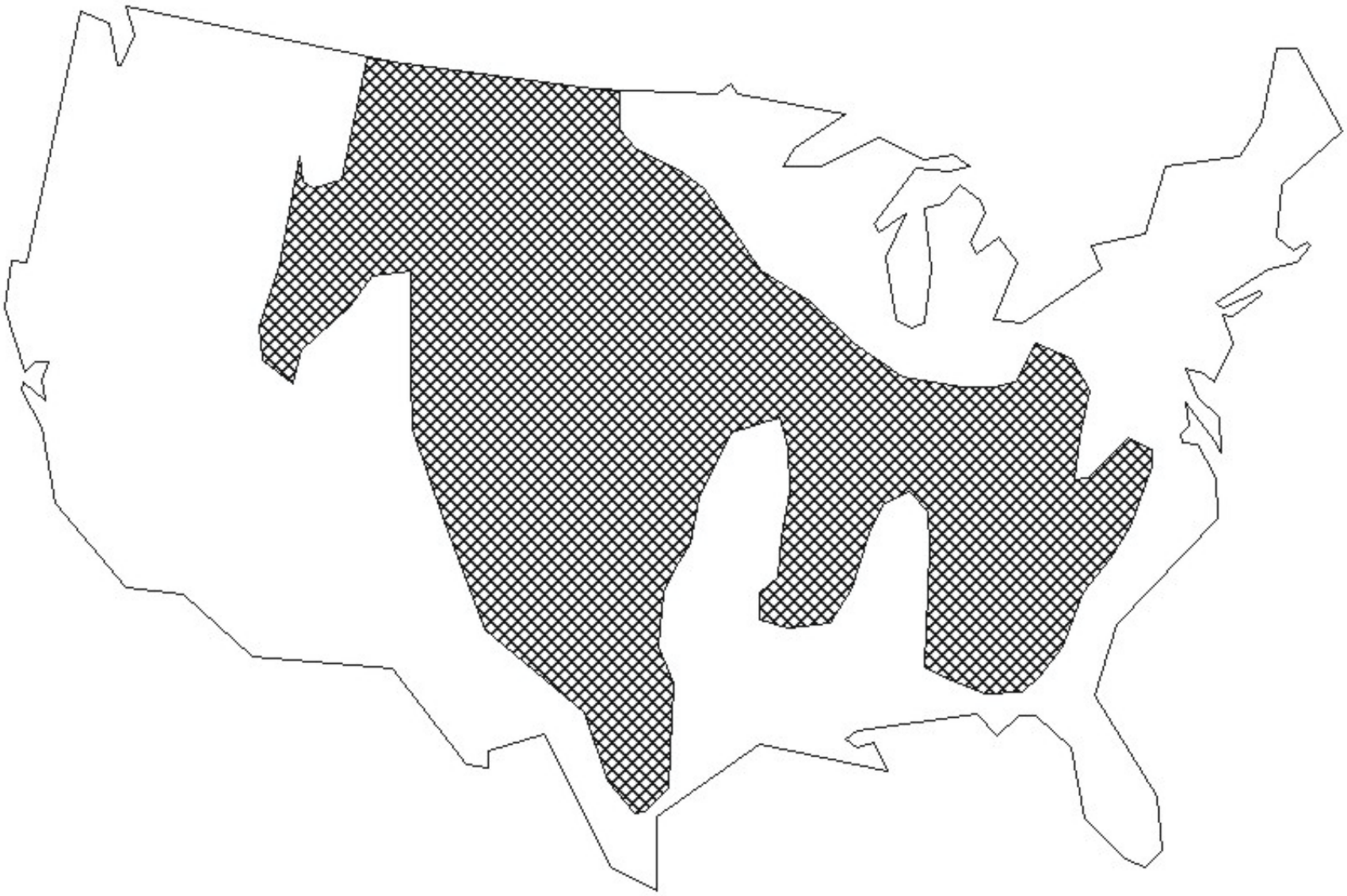
Fire is a Critical Component of Many Ecosystems

- Science demonstrates that low-intensity surface fires were historically a critical ecological process in as much as 60% of North American landscapes.
- Societal attitudes and perceptions create inherent challenges for 21st century land managers using fire, whether they are working to restore or maintain ecosystem function or to protect resource investments.

1880 Survey Map. Darkest Color Represents 10% of "Woodlands Burned Annually Within Settled Areas.

Courtesy of The Forest Historical Society. Published in Pyne, Stephen J. "America's Fires"

Range of the Modern Buffalo Herd Approximately 400 years B.P.

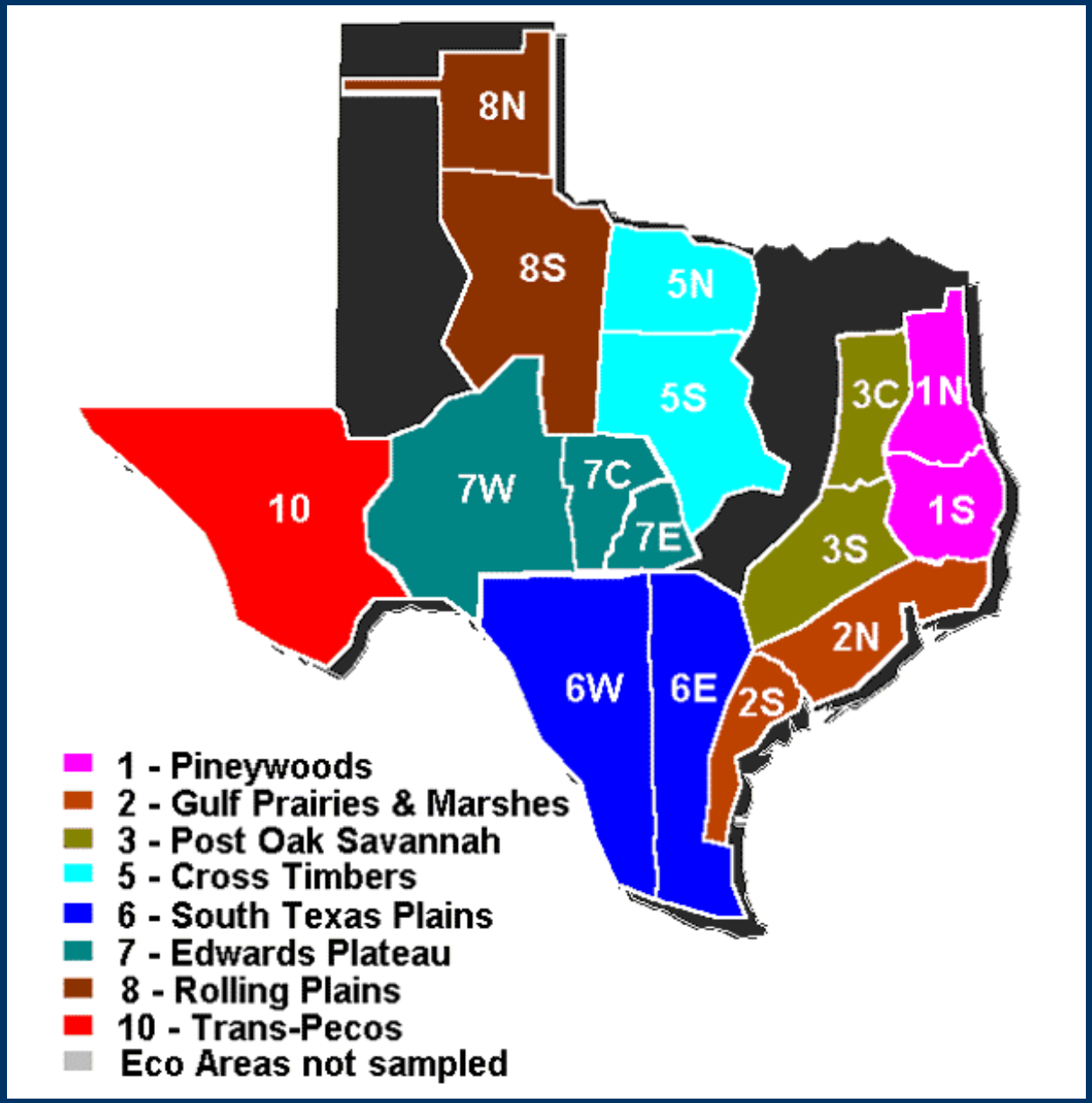


Perception of Fire
19th and 20th Centuries

- As America became more urban, fire was not an important component of one's livelihood.
- The Weeks Act, 1911, set up a national fire protection system.
- Fire use became regulated and halted.
- Ecosystems were degraded.
- "Authorities treated fire like it was atomic energy, too dangerous for ordinary citizens to use" Steve Pyne 2012.

21st Century

- A century later the scene looks different. A revolution in thinking about fire begun in the 1960s has sought to promote fire, make fire institutions serve land use, and validate a civil society for fire. It has culminated in a rechartering of rights and responsibilities under a “national cohesive strategy,” released on the centennial of the Weeks Act. Payne 2012.
- This sounds good, but what is the reality?



Most of the Ecological Regions in Texas are Fire Dependent.

For instance, there is little area left that would adequately represent the pre-settlement Post Oak Savannah region today.

Fire History

- Fire is a natural occurrence.
  - Periods of drought
  - Lightening Strikes
  - Enormous areas burned until they burned themselves out.

- Fire is a human association.
  - Native Americans used fire to attract food.
  - Early European settlers used fire to clear land similar to Brazil today.

Pinewoods Fire History & Use

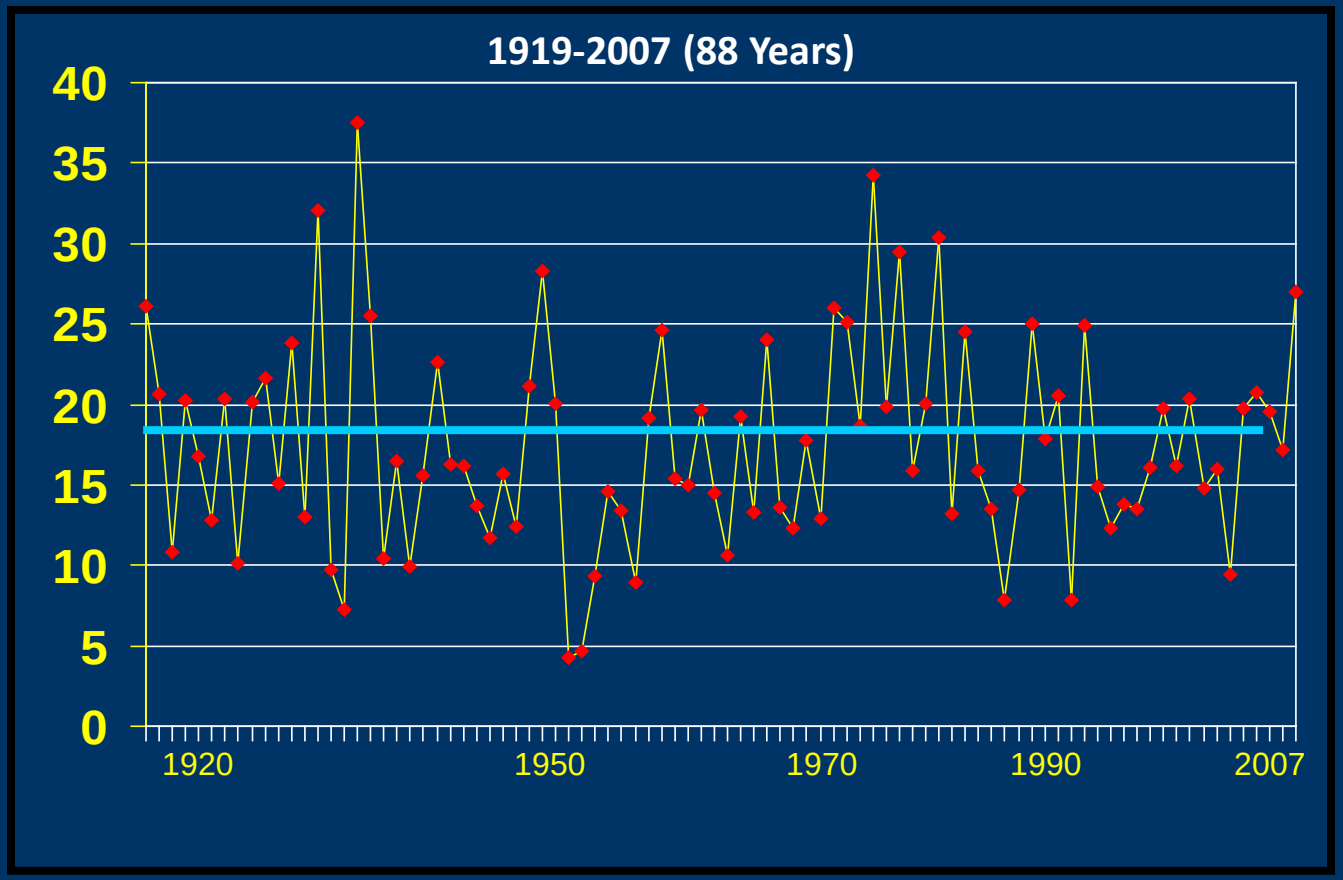
- Clear land for Farming
- Reduce Logging Slash
- Promote New Growth

“The Time It Never Rained”

Elmer Kelton

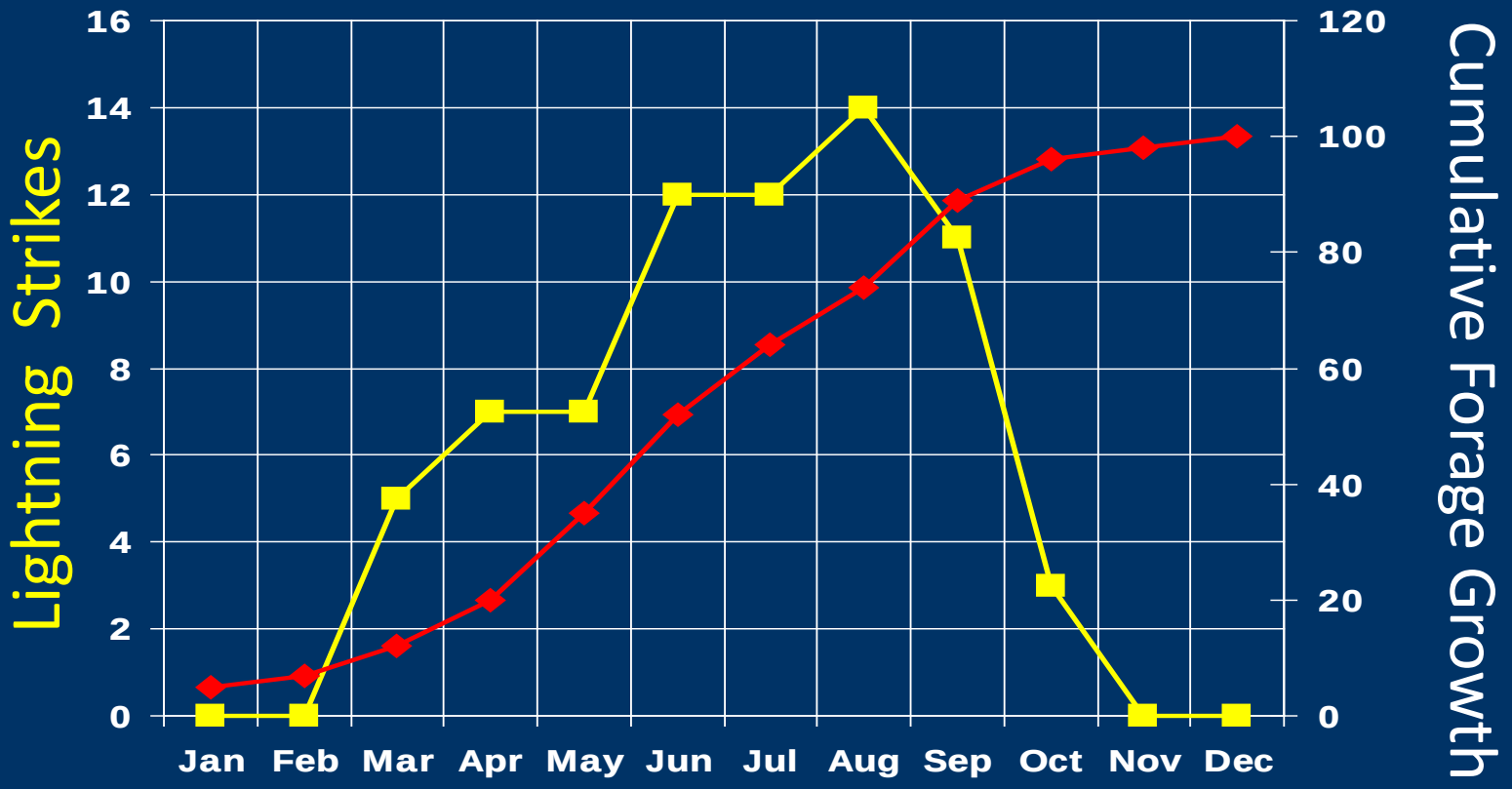
“Each new generation tends to forget – until it confronts the sobering reality – that dryness has always been the normal condition in the western half of the state. Wet years have been the exceptions.”

Long-Term "Growing-Season" Precipitation on the Texas AgriLIFE-Sonora (Semi-arid environment)



A major portion of Texas is a semi-arid region. In a desert, one knows what to expect of the climate and plan accordingly. The same is true of the humid regions. Men have been badly fooled by the semi-arid regions because they are sometimes humid, sometimes desert, and sometimes a cross between the two.

Lightning Strikes and Cumulative Forage Growth

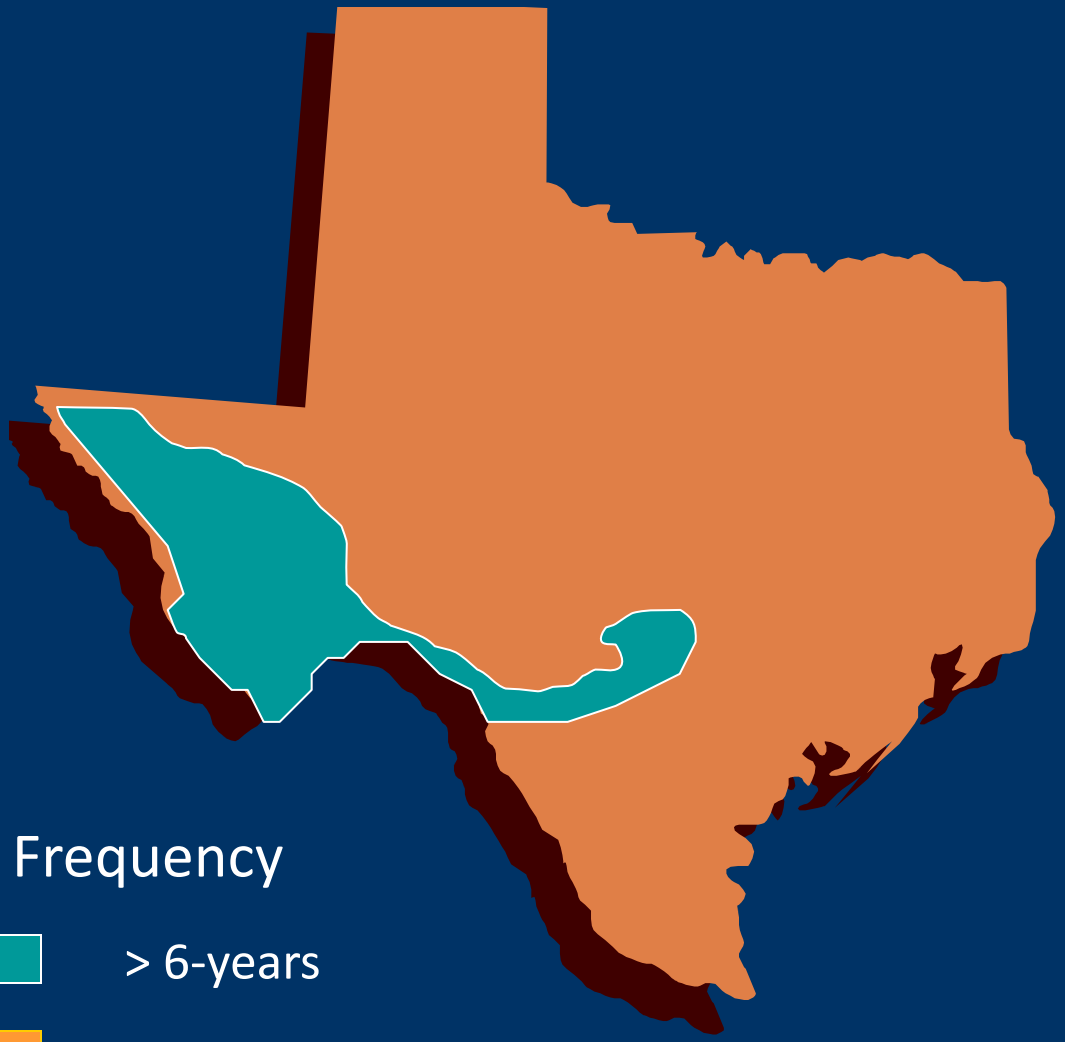


In the mid 19th century, one chief set a fire that burned 62 counties

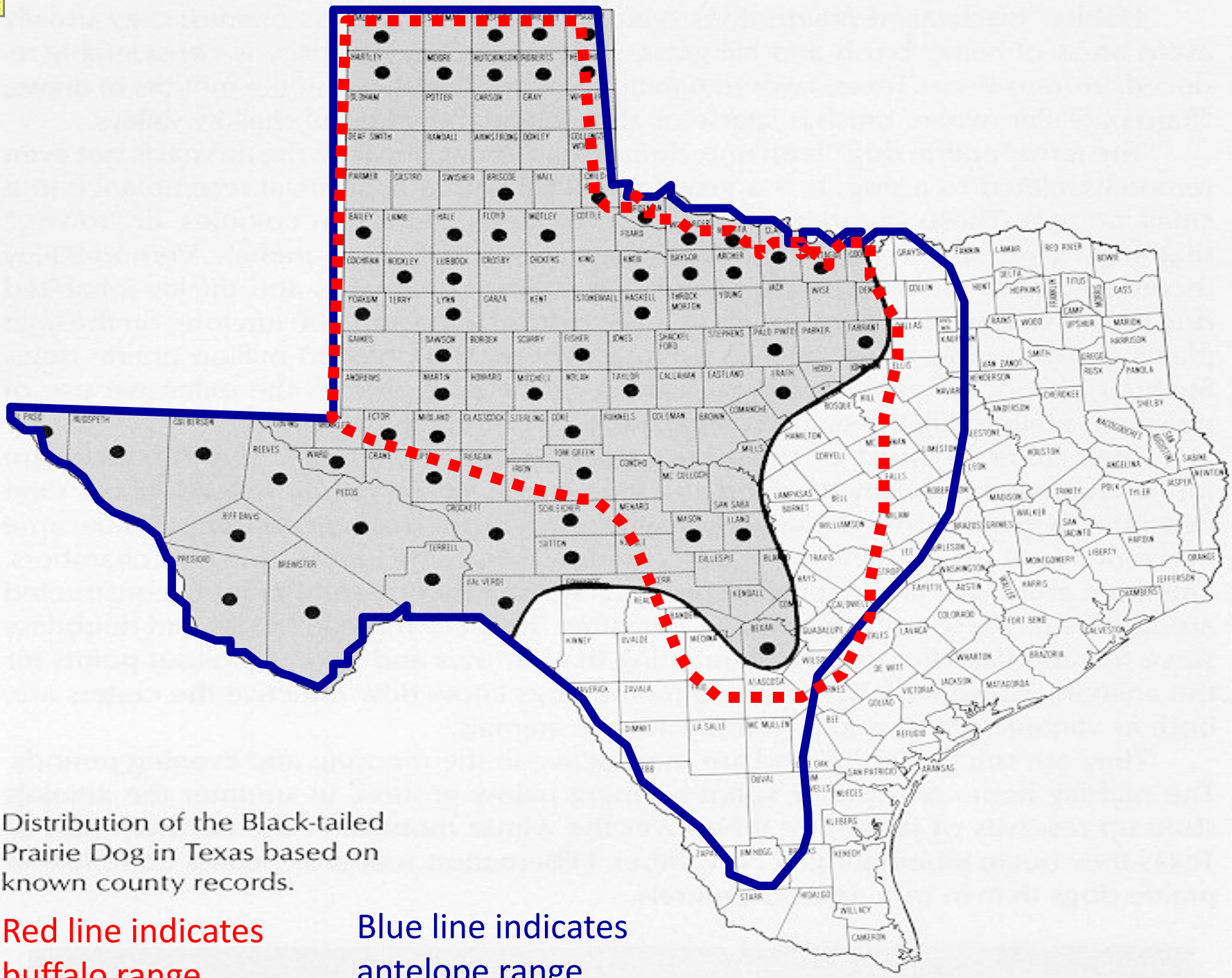
Permission from Debbie Grayson Lincoln

"In the spring the Indians throughout the buffalo country burned off the old grass in places where they had not used a fire drive in the previous autumn. Until the new grass attracted the buffalo herds, the Indians hauled in the animals drowned in the river during the winter" (Haley 1929).

Fire Frequency



Adapted from Frost 1998



Distribution of the Black-tailed Prairie Dog in Texas based on known county records.

Red line indicates buffalo range

Blue line indicates antelope range

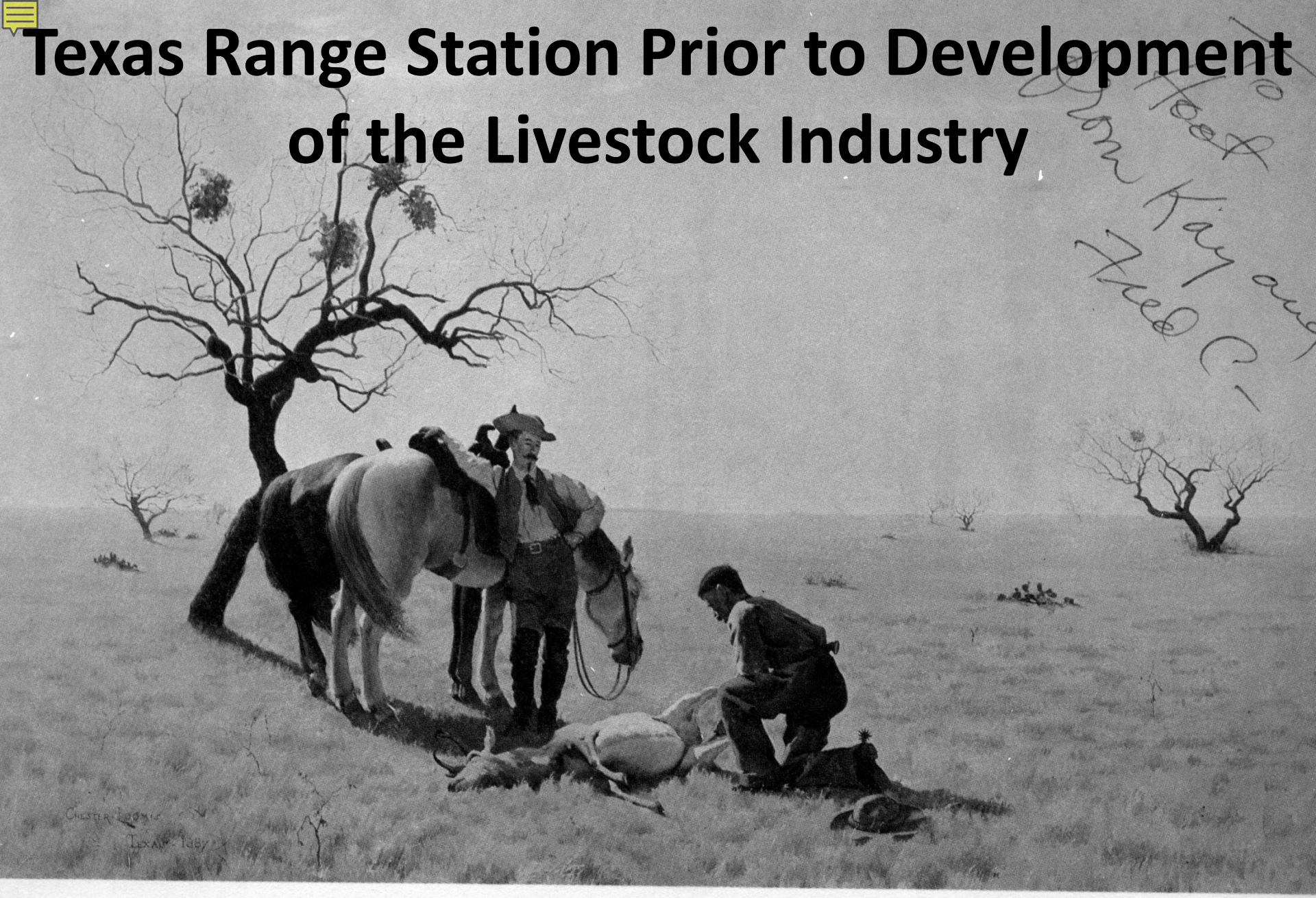
Across Texas Woody Vegetation has Increased in Abundance Relative to Grasslands….Foster 1917

"The causes which have resulted in the spread of timbered areas are traceable directly to the interference of man. Before the white man established his ranch home in these hills, the Indians burned over the country repeatedly and thus prevented any extension of forest areas. Overgrazing has greatly reduced the density of grass. The practice of burning, has during recent years, disappeared. Almost unquestionably the spread of timbered areas received its impetus with the gradual disappearance of grassland fires."

European Influence

- Spanish Explorers.
- Westward exploration and settlement.
- Livestock industry explodes in Texas.
- Heavy grazing fireproofed the area in most years.

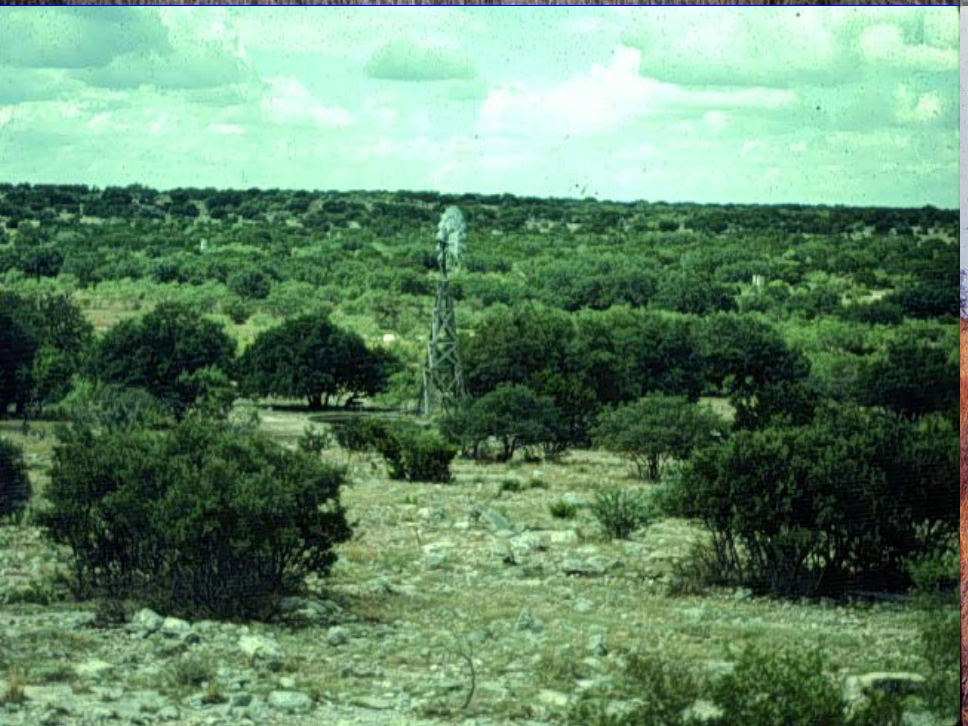
Texas Range Station Prior to Development of the Livestock Industry



Antelope Hunters, Texas, 1887. Chester Loomis with beard, John Loomis kneeling. The Anschutz Collection.

A Hot Fire Described by Bennett in March 1852 While Camped on the Rio Grande in southern New Mexico

"Today the grass was as high as our heads and accidentally it got on fire. It came rushing on at a tremendous rate. We had merely time to save ourselves by running to the sandy beach of the river. All our provisions, saddles, arms, ammunition, and camp equipment were destroyed. It was an exciting time. Three hundred guns and several pistols, lying promiscuously on the ground, discharge their deadly contents in all directions. No accidents, however, happened."



Heavy Grazing/Browsing for 90+ years. no fire, herbivory has reduced the recruitment of new juniper plants.

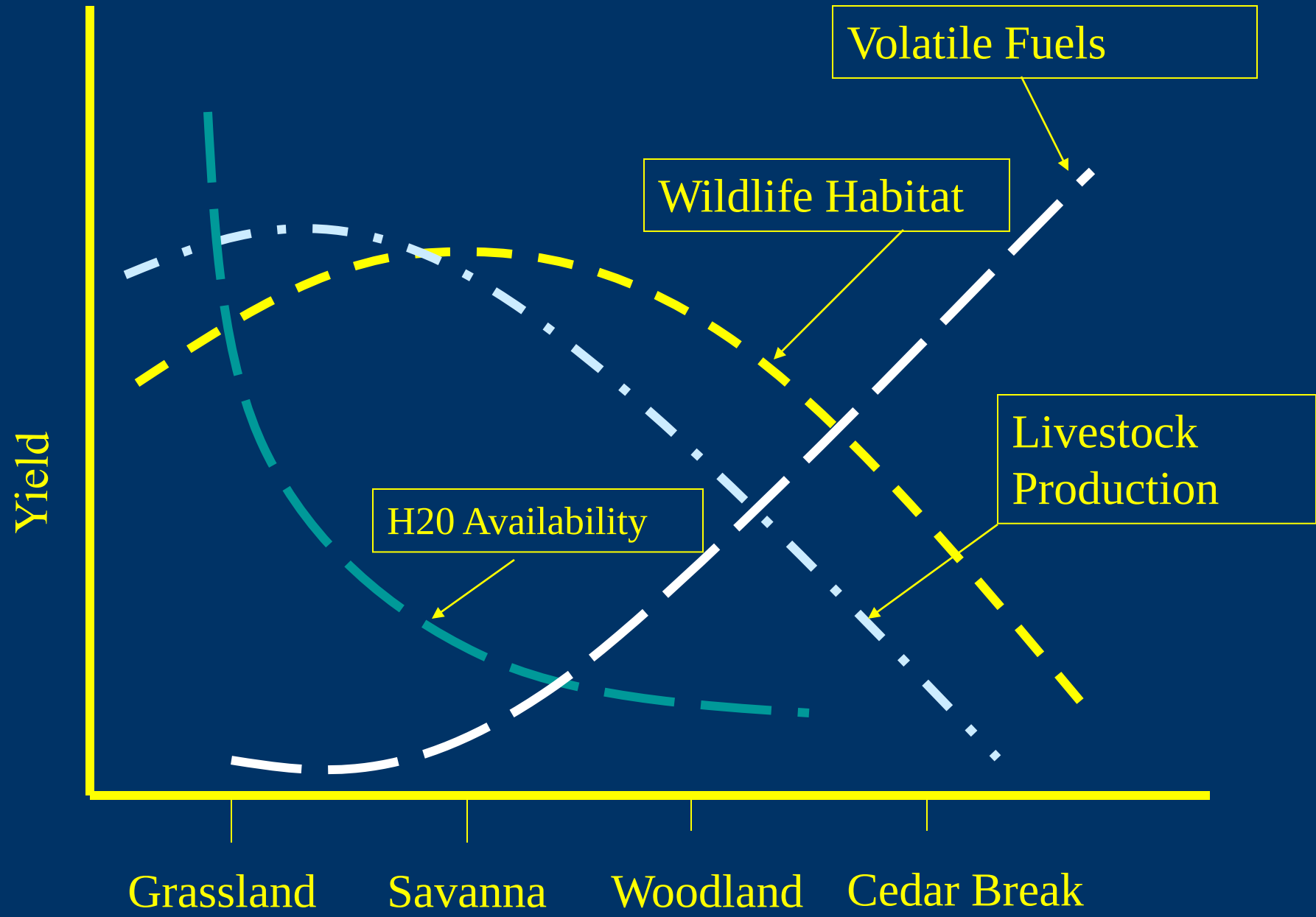
No fire for 8-years. No goats.

No fire for 16-years. No goats.

No fire for 25-years. No goats.

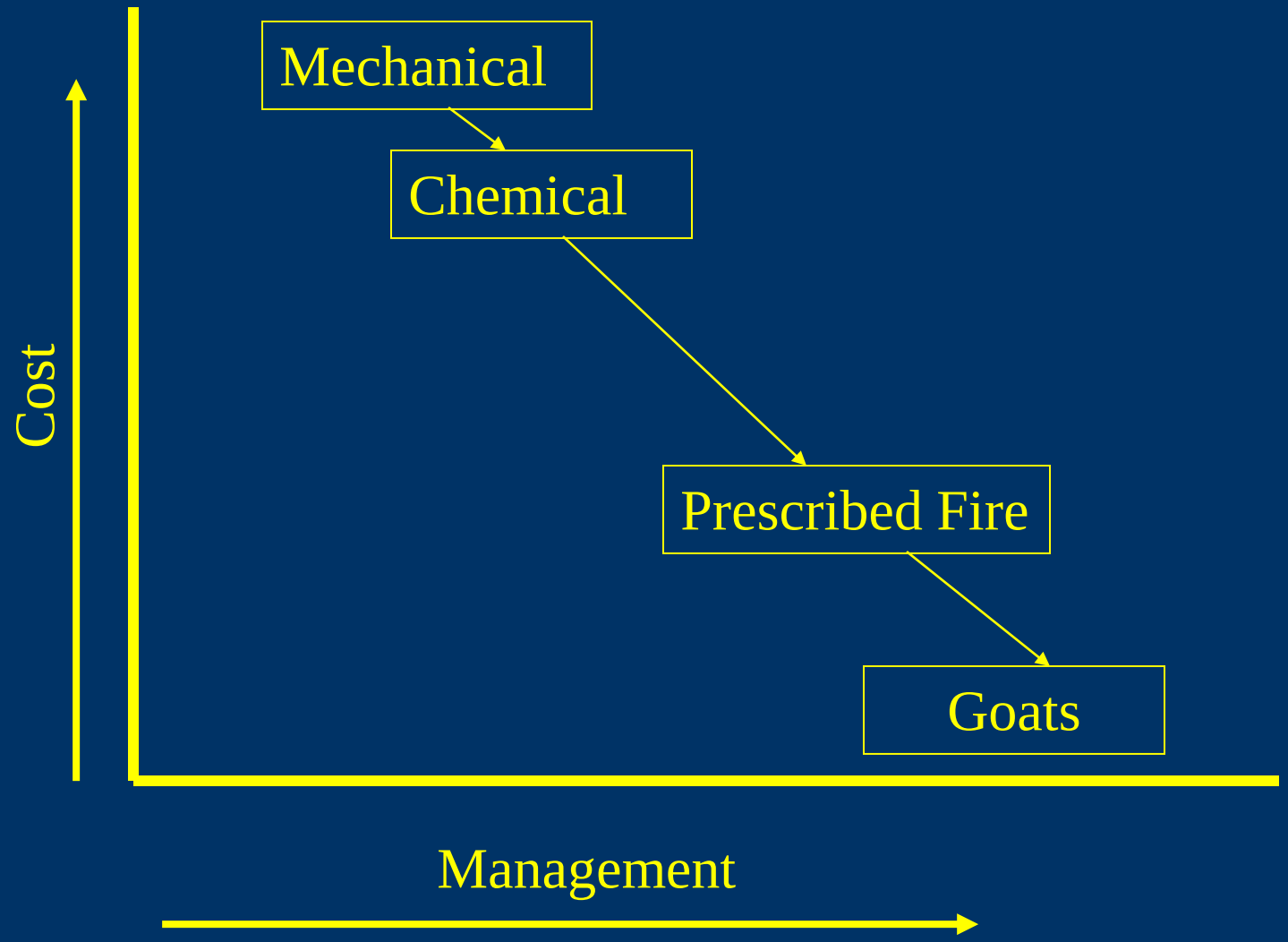

55-years of no grazing/browsing or fire

Effects of Cedar on Rangeland Products




CATERPILLAR

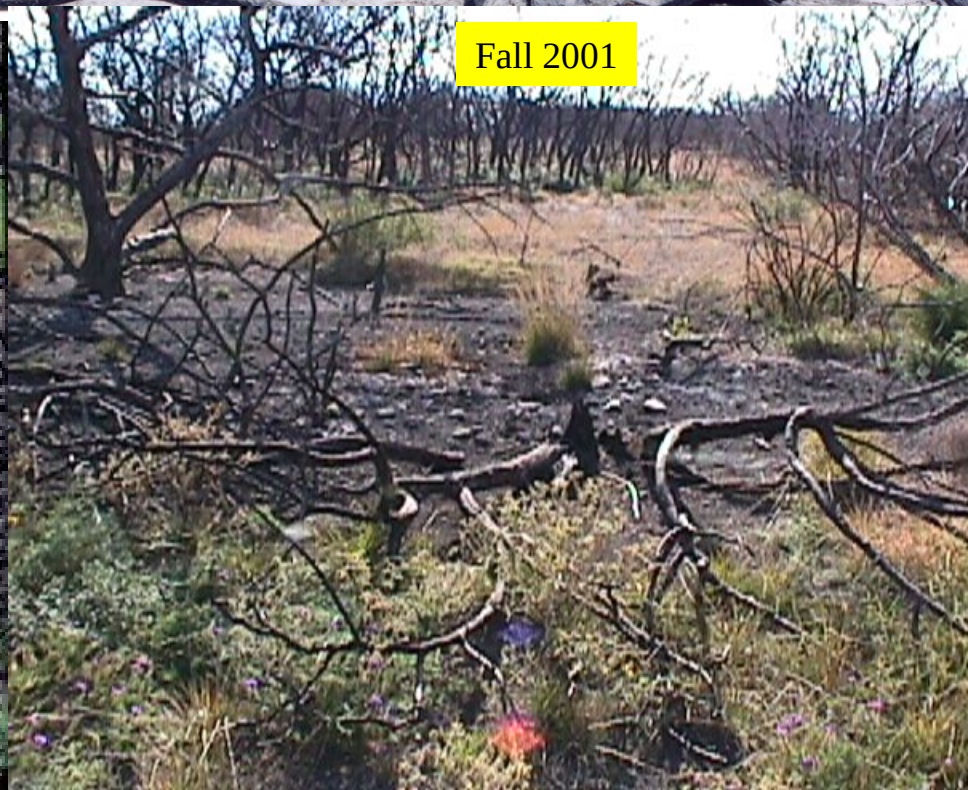
Relative Economics and Management Requirements for Juniper Management




Preburn May. 2000


Post burn Aug 2000


Spring 2001


Fall 2001

Summer 2003

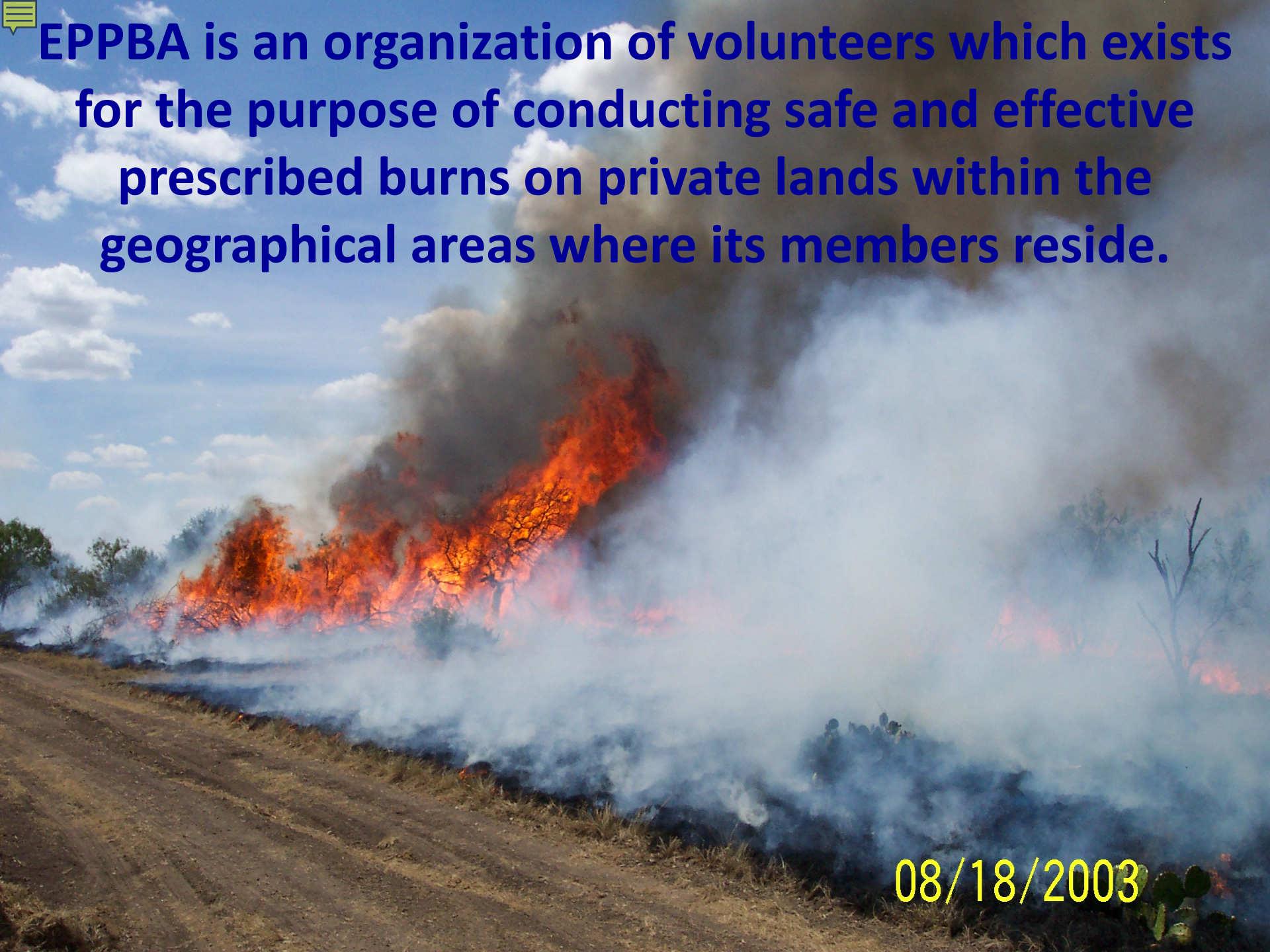
If Prescribed Fire is Such a Good Deal, Then Why Weren't Ranchers Using it on a Routine Basis?

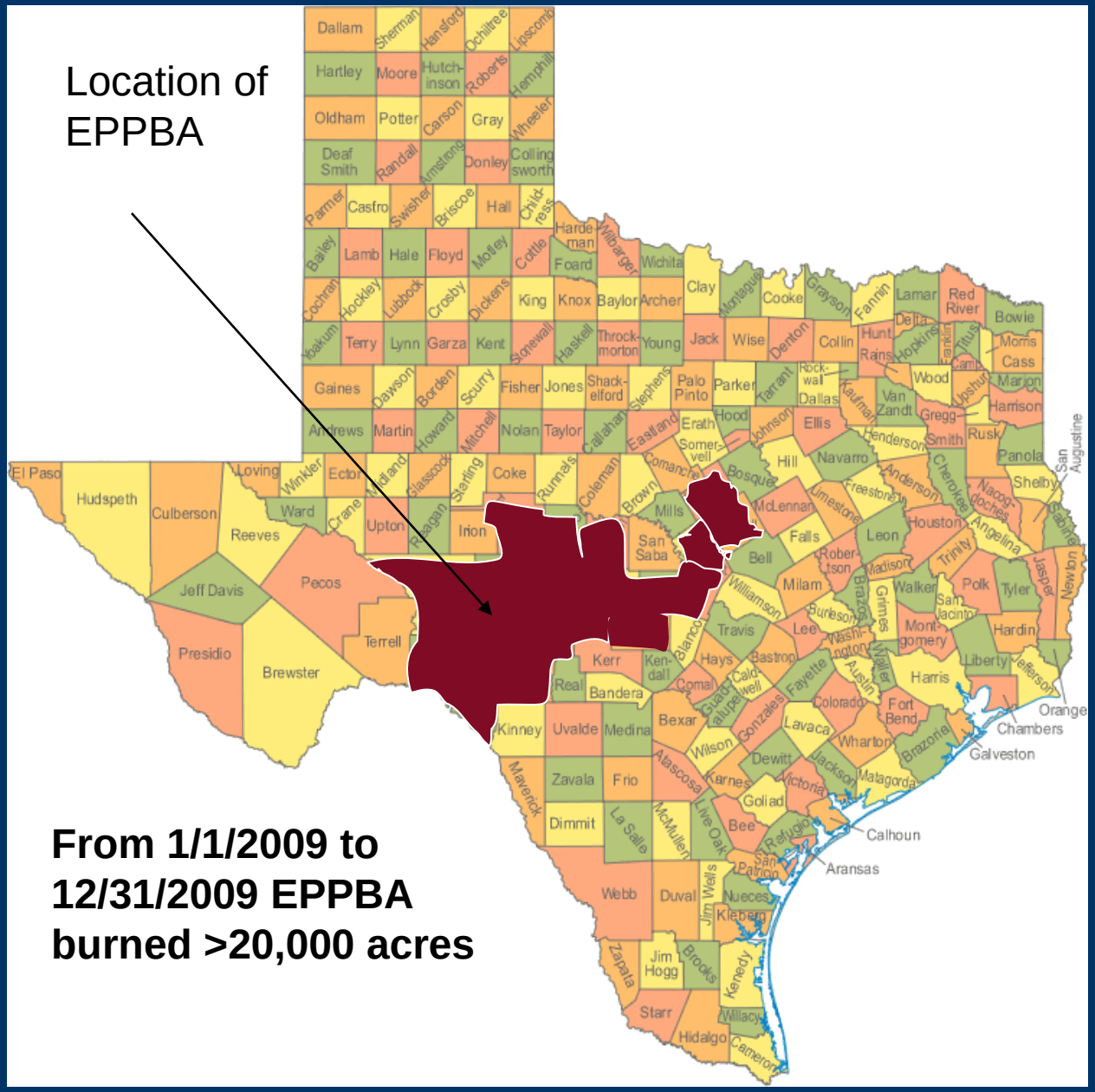
1. Long history of fire suppression in Texas (for example, the XIT ranch began plowing fire guards in 1885, the year cattle were placed on its range (Haley 1929). In one year, over 1,000 miles of guards, 100 feet wide had been plowed on the ranch).
2. Prescribed fire is limited by social constraints (Two laws were passed in Texas to regulate fire. One in 1848 and the other in 1884).
3. Liability rules affect incentives for prescribed fire use (i.e., liability is consistently listed as a major concern for ranchers using prescribed fire).
4. Most Texas ranchers are not raised in a "fire culture".

The bottom line is, if ranchers want to use prescribed fire on a routine basis, they will have to organize at the local level to enhance their clout within the local community.

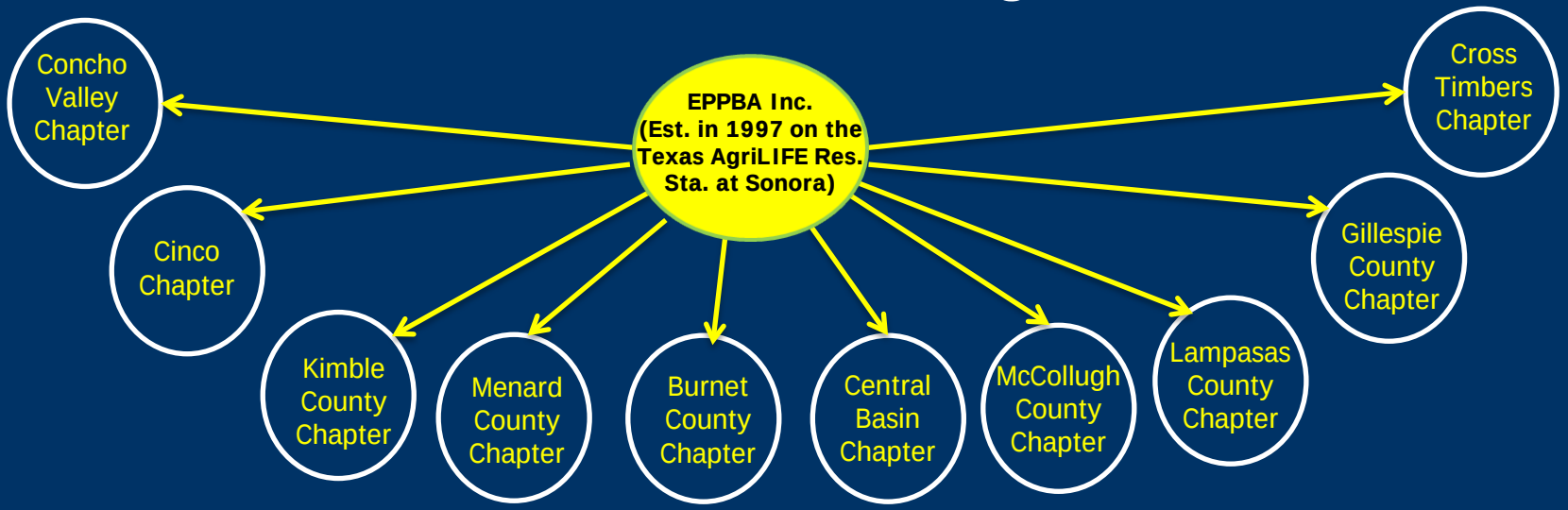
The Edwards Plateau Prescribed Burning Association (EPPBA) was established in the fall of 1997 at the TAMU Research Station located between Sonora and Rocksprings.

The EPPBA was Incorporated on March 29, 1999.


EPPBA is an organization of volunteers which exists for the purpose of conducting safe and effective prescribed burns on private lands within the geographical areas where its members reside.
08/18/2003


Location of EPPBA
From 1/1/2009 to 12/31/2009 EPPBA burned >20,000 acres

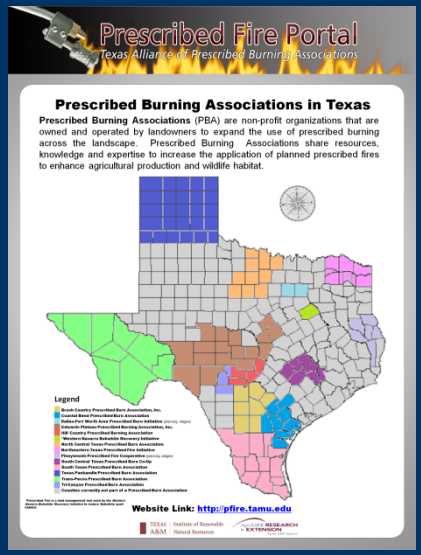
Edwards Plateau Prescribed Burning Association, Inc.



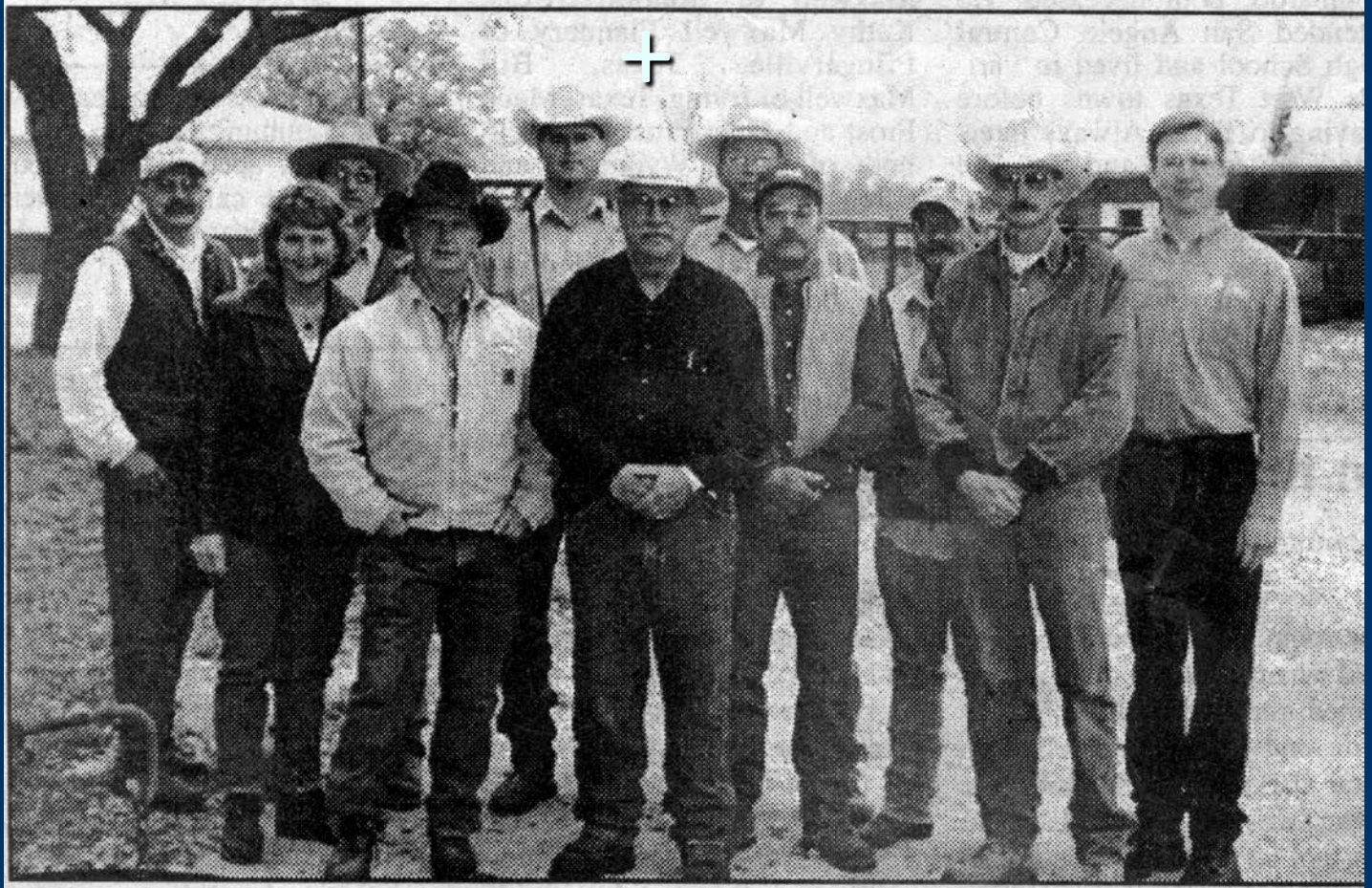
http://www.ranchmanagement.org/eppba

Prescribed Burn Associations in Texas

- Hill Country Prescribed Burning Association (Est. 2005)
- Coastal Bend Prescribed Burn Association (Est. 2006)
- Western Navarro Bobwhite Recovery Initiative (Est. 2006)
- North Central Texas Prescribed Burn Association (Est. 2008)
- Texas Panhandle Prescribed Burn Association (Est. 2005)
- *Dallas-Ft. Worth Area Prescribed Burn Initiative (Planning stages)*
- *Pineywoods Prescribed Fire Cooperative (Planning stages)*
- Brush Country Prescribed Burn Association (Est. 2008)
- Tri-Canyon Prescribed Burn Association (Est. 2011)
- South Central Texas Prescribed Co-Op (Est. 2008)
- South Texas Prescribed Burn Association (Est. 2008)
- Trans-Pecos Prescribed Burn Association (Est. 2009)
- Northeast Texas Prescribed Fire Initiative (Est. 2010)



Edwards Plateau Prescribed Burning Association Prepares Film For Awards Ceremony



Members and Directors representing the Edwards Plateau Prescribed Burning Association tha are being honored as one of the 12 winners of the coveted Governor's Environmental Excellenc Awards were joined by TNRCC representatives on Saturday, April 6th for the making of a spe cial awards video that will be shown at the awards ceremony in Austin, Texas on May 7th Pictured here are (from l to r) are: back row - Nick Garza, Lewis Allen, Mark Alsup, Curr Campbell, Gus Ward and Ted Hazen. Front row - Dana Macomb, Terry Brooks, Dr. Charle "Butch" Taylor, Bob Brockman, and Tom Payton. For more pictures of the award winnin burning association activities *see page 7*.


Happiness is smoke on the horizon

Burn Bans are Limiting the Restoration of Texas' Rangelands

2005/2006 Fire Season

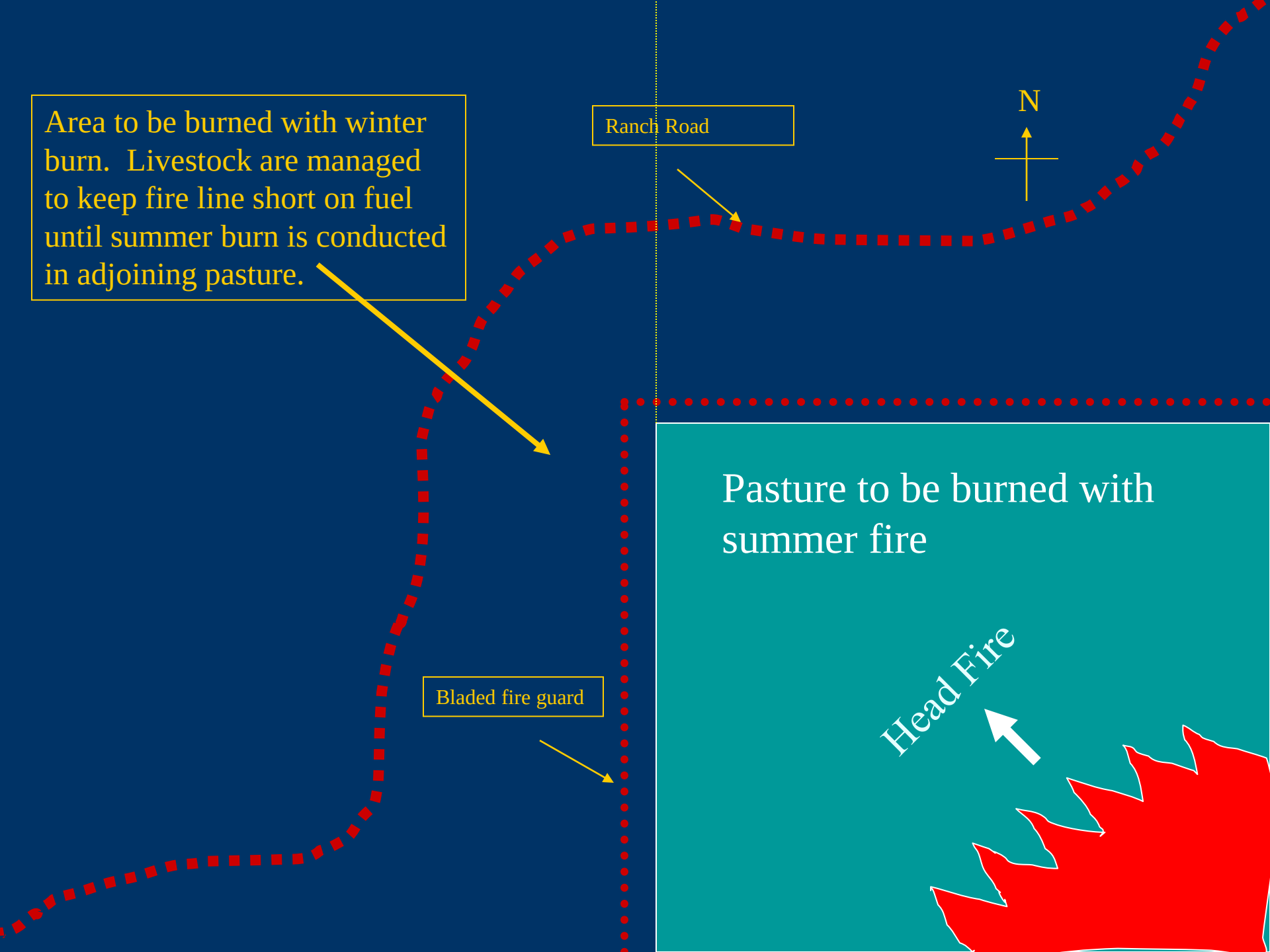
- Two fires burned across 800,000 acres in one day. For the entire 2005/06 fire year 29,141 wildfires were recorded.
- Total acres burned was 2,260,240. Property loss was estimated at $628 million. The fire suppression response alone cost the state $80 million.
- 20-people lost their lives to these wildfires. 85-percent of the fires occurred within two miles of communities.

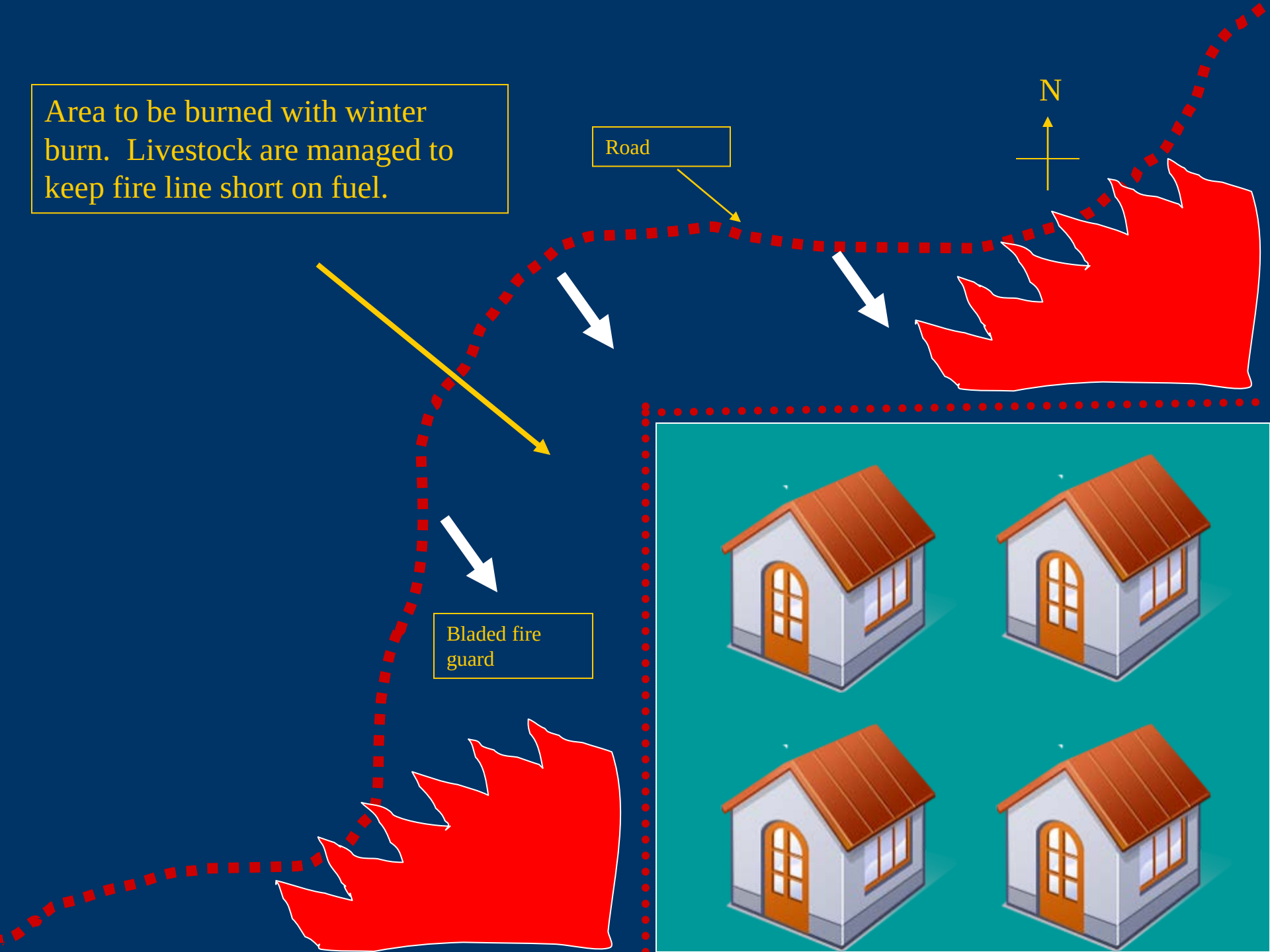
Texas A&M Forest Service

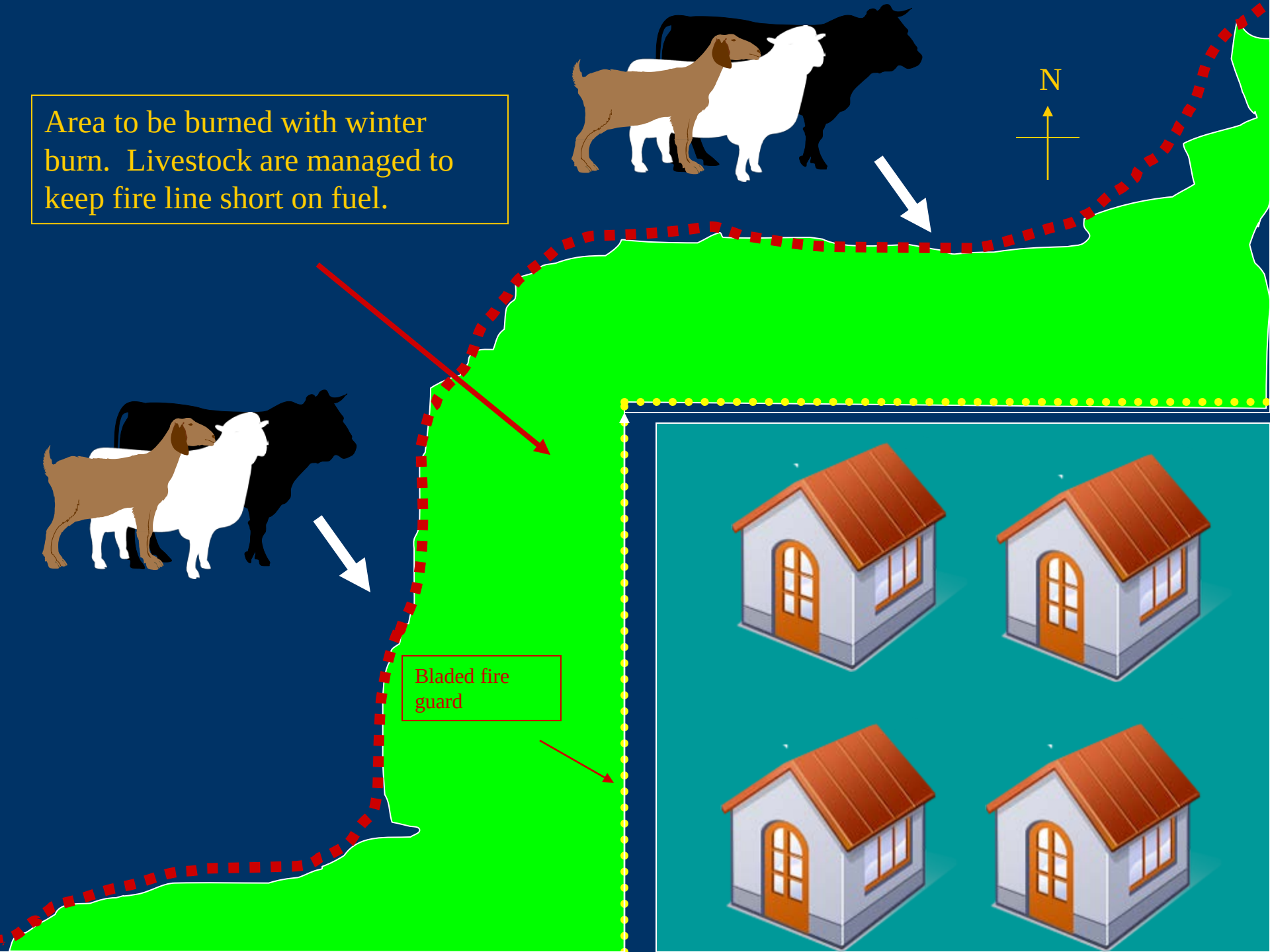
2010/2011 Fire Season

- There were 30,547 fires on 3,993,716 acres. 2,946 homes destroyed and
- 2,792 other structures destroyed. Fire suppression response alone cost the state $330 million.

Texas A&M Forest Service


Area to be burned with winter burn. Livestock are managed to keep fire line short on fuel until summer burn is conducted in adjoining pasture.
Ranch Road
N
Pasture to be burned with summer fire
Head Fire
Bladed fire guard


Area to be burned with winter burn. Livestock are managed to keep fire line short on fuel.
Road
N
Bladed fire guard


Area to be burned with winter burn. Livestock are managed to keep fire line short on fuel.
N
Bladed fire guard

Academy for Ranch Management

2 ½-day workshops on Prescribed fire
http://www.ranchmanagement.org